August 2002

Washington State DOT

Remote Sensing Applications for Environmental Analysis in Transportation Planning: Application to the Washington State I-405 Corridor

The Cast of Players

Leica Geosystems

ERDAS
geographic imaging made simple

Washington State Department of Transportation

OAK RIDGE NATIONAL LABORATORY

Wisconsin DOT

Puget Sound Regional Council
psrc.org
regional transportation and growth management planning

SPACE IMAGING
Visual Information. Visible Results.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Project Goals / Purpose

Evaluate the cost benefit advantages of using remote sensing based information for corridor level, programmatic Environmental Impact Statements in a rapidly developing metropolitan area (“Pugetopolis”).

Project Deliverables

- A data base for use in preliminary site specific EIS work.
- A cost / benefit evaluation of how a remote sensing based approach can help streamline EIS data collection
- Documentation for how to create data for this purpose.

Data Resources

½ foot digital color orthophoto was created for a 1 mile swath around current highway

Data Resources

Terrain Corrected Landsat7 for 2000 (3-2-1 mosaic)

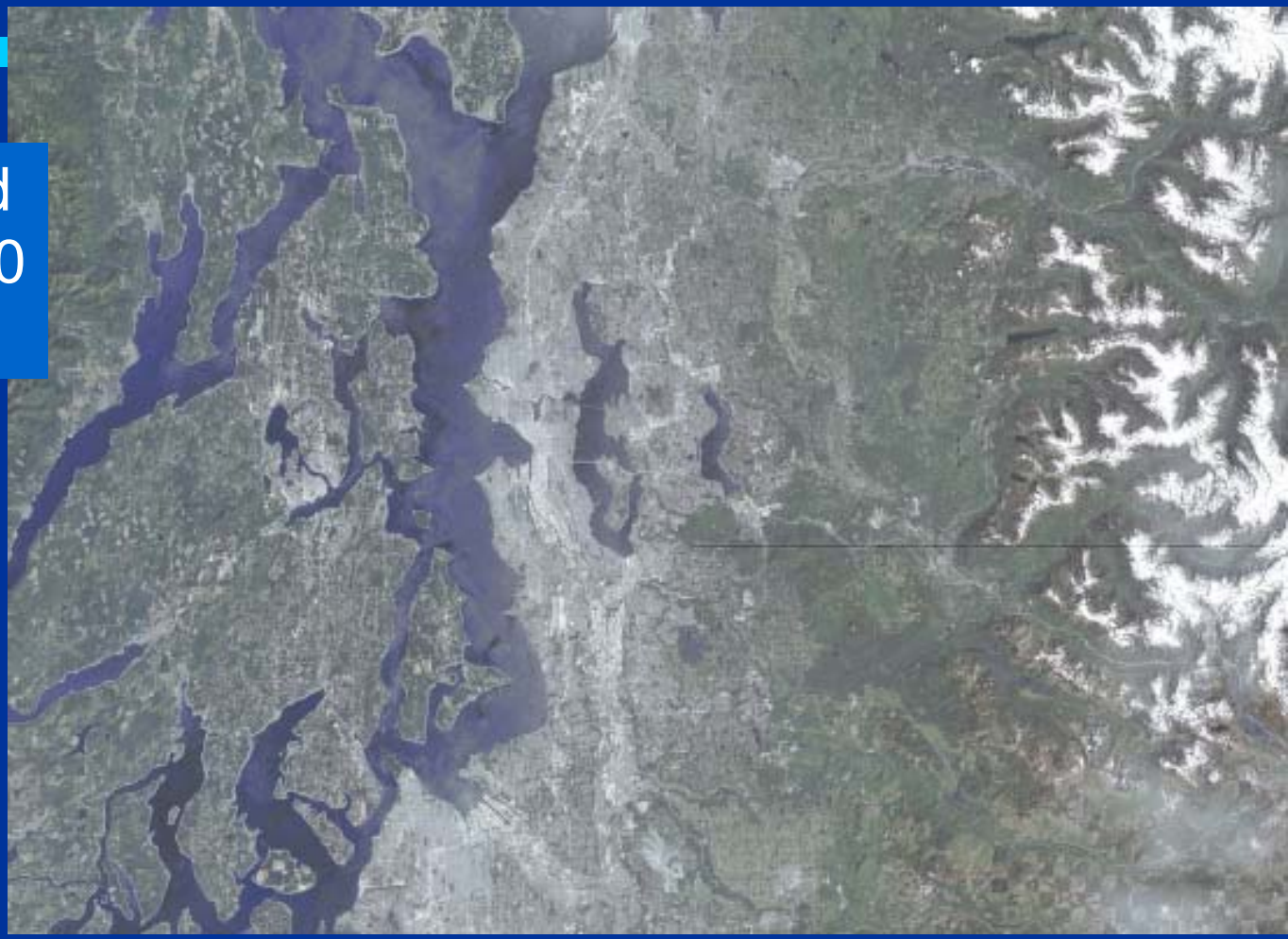
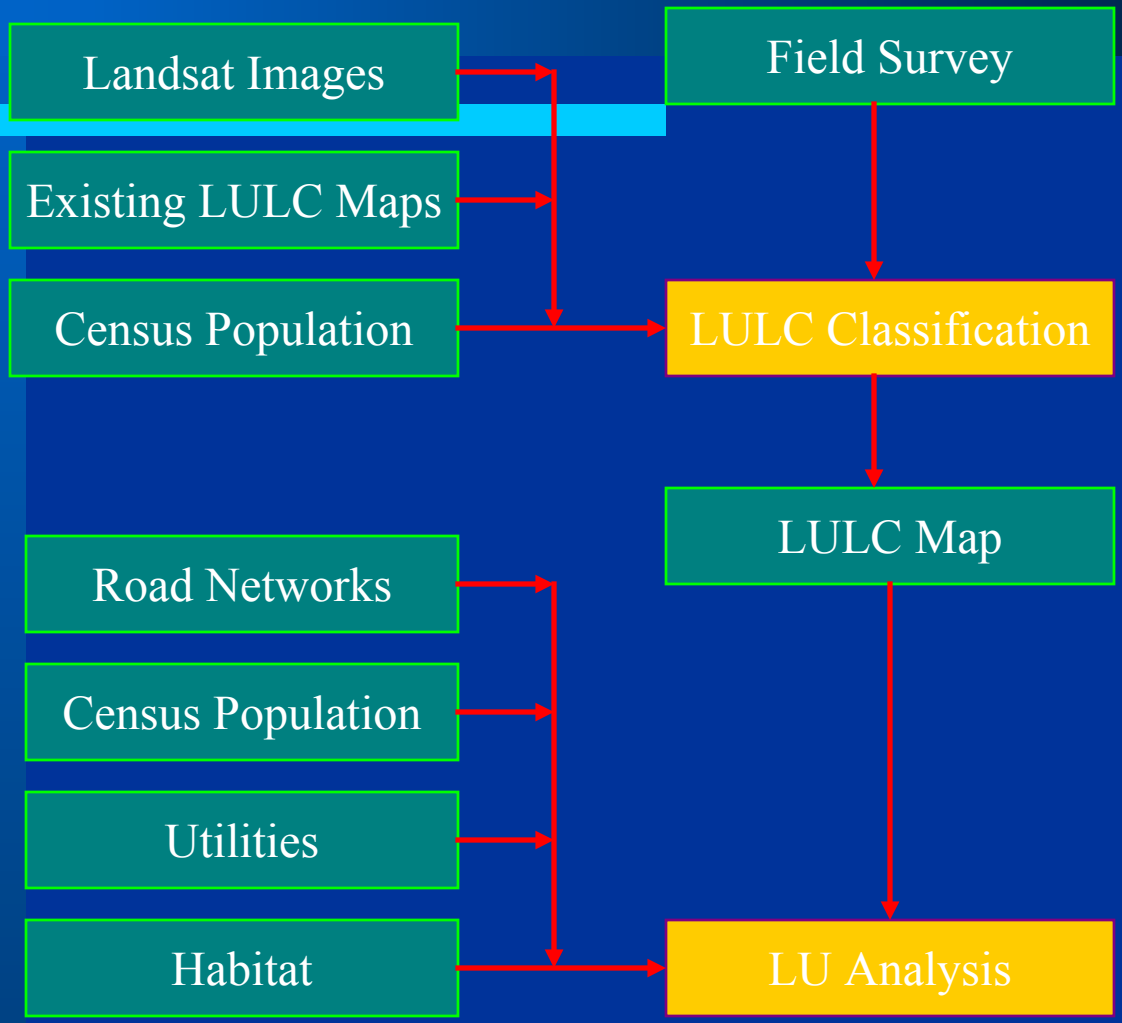
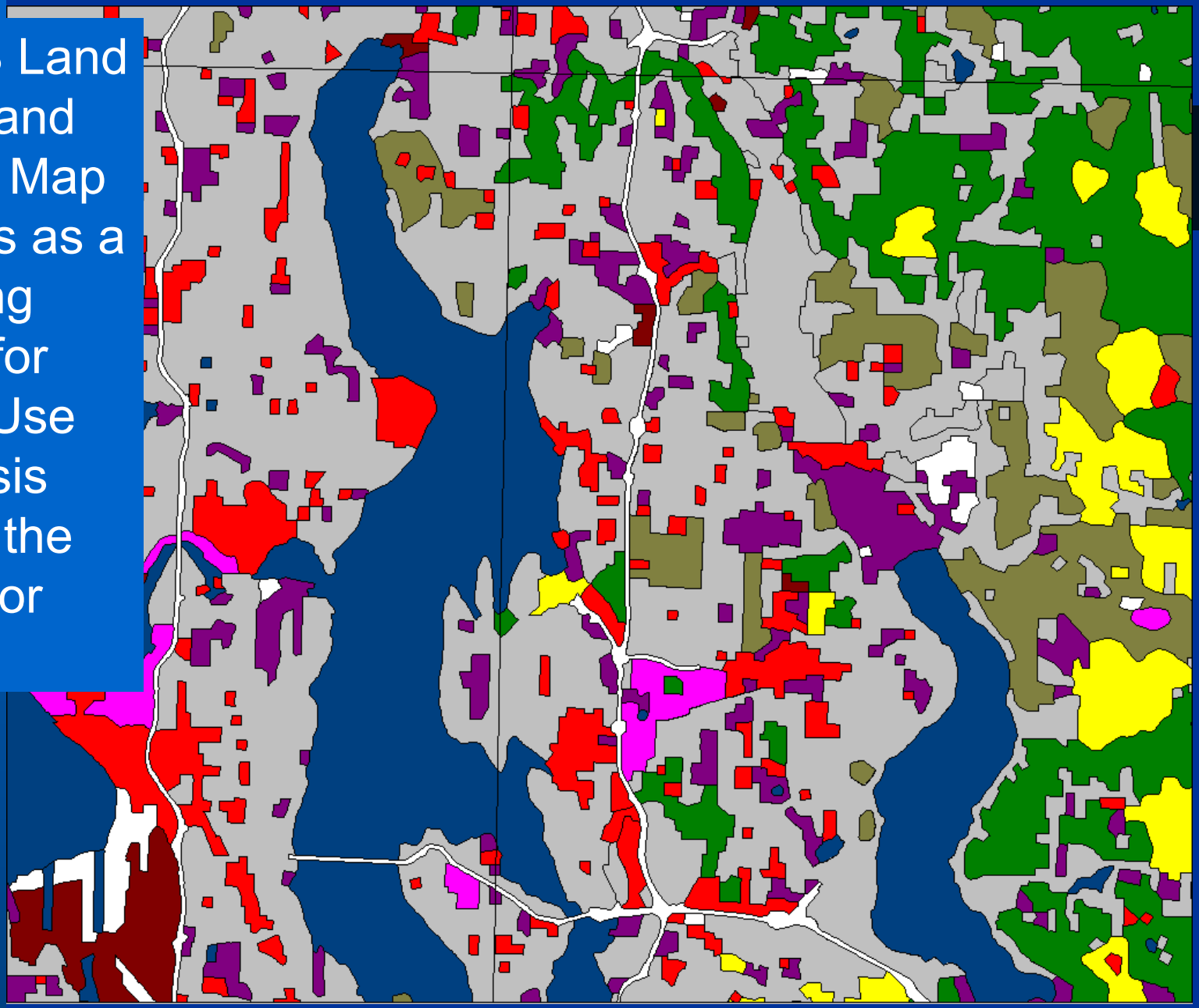


Image and GIS-based Land Use Analysis

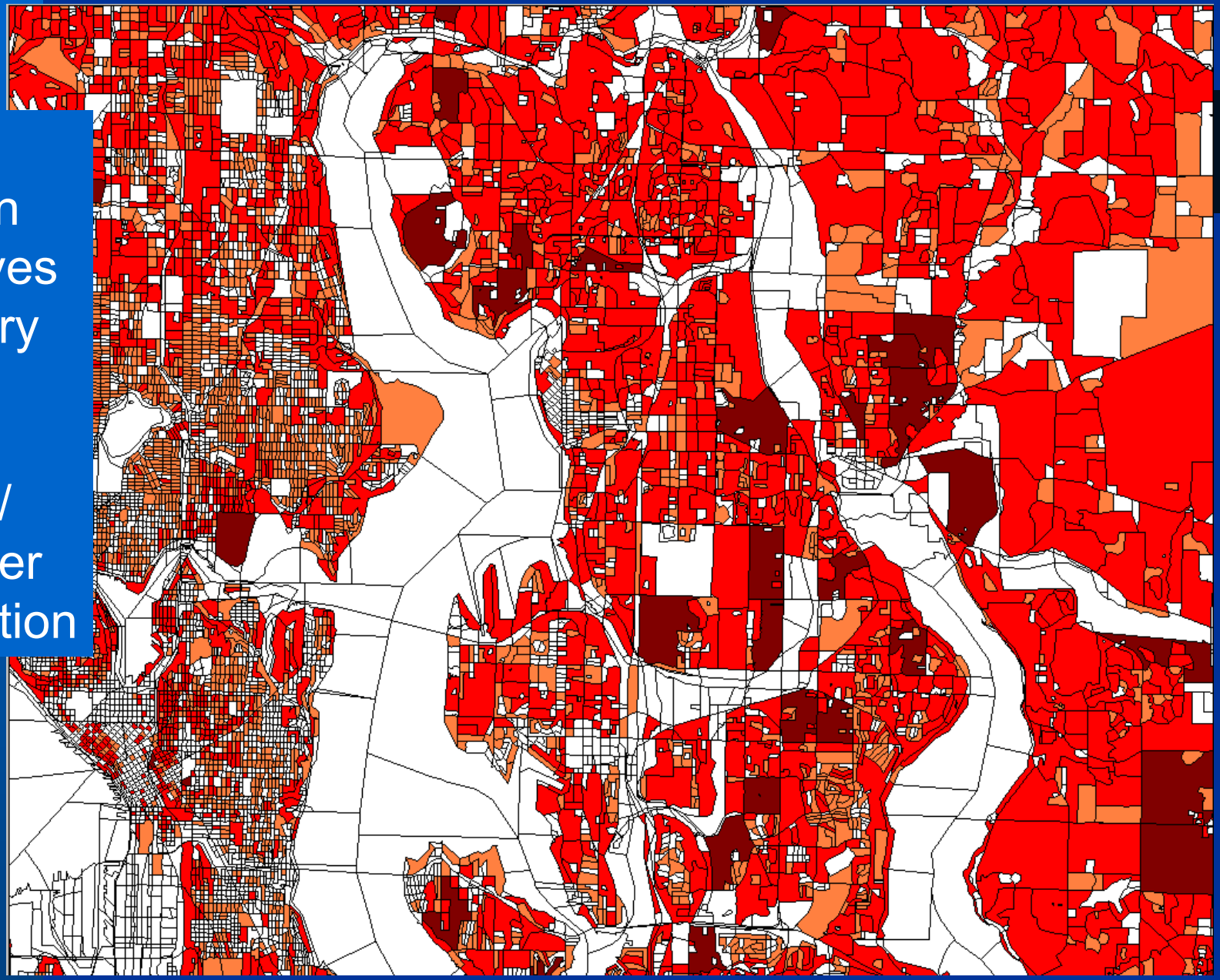


30 m
Landsat ETM+
Multispectral
Images
Sharpened
with
15 m
Panchromatic
Band
Used as the
Primary Image
Source for
Land Use/Land
Cover
Classification

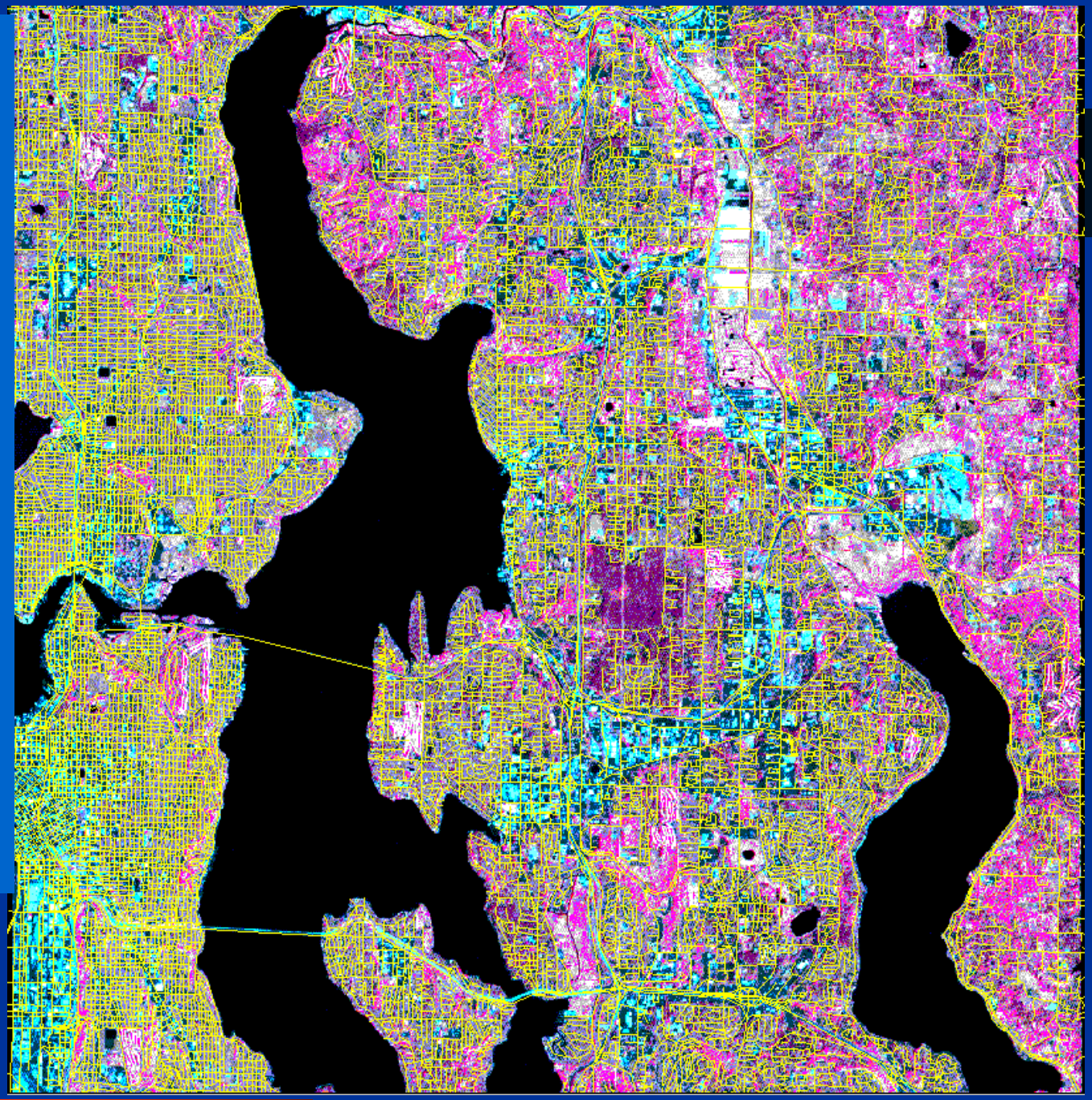
USGS Land Use/Land Cover Map Serves as a Starting Point for Land Use Analysis Along the Corridor



Census Population Data Serves as Ancillary Data to Improve Land Use/ Land Cover Classification



Road Network Map overlaid with Land Use/ Land Cover Maps Allows for Statistics such as Acreage of Particular Land Use Classes Along the Corridor within a Given Drainage Basin



A Set of Sample Sites have been Selected for Field Survey. The Survey Results will feed to the Supervised Land Use/Land Cover Classification Process

Field Study Phase 1

Project Schedule Update

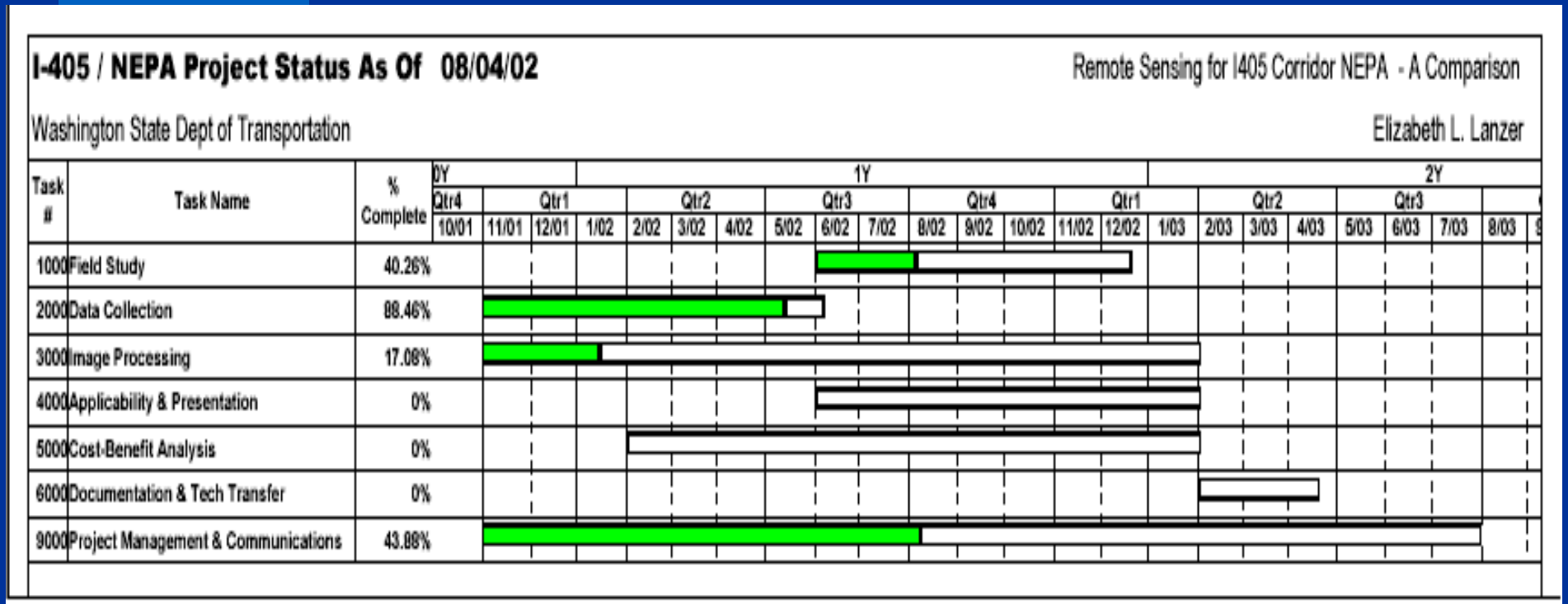
I-405 / NEPA Project Status As Of 08/04/02

Remote Sensing for I405 Corridor NEPA - A Comparison

Washington State Dept of Transportation

Elizabeth L. Lanzer

Task #	Task Name	% Complete
1000	Field Study	40.26%
2000	Data Collection	88.46%
3000	Image Processing	17.08%
4000	Applicability & Presentation	0%
5000	Cost-Benefit Analysis	0%
6000	Documentation & Tech Transfer	0%
9000	Project Management & Communications	43.88%



Summary Status

We had a bumpy start but are going pretty well now

- Data partnerships in place
- Some mid-resolution MSS involved (Space Imaging)
- Classification Approach drafted
- Field work – pre classification done
- Image Processing Methods Approach in progress

Contact Information

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